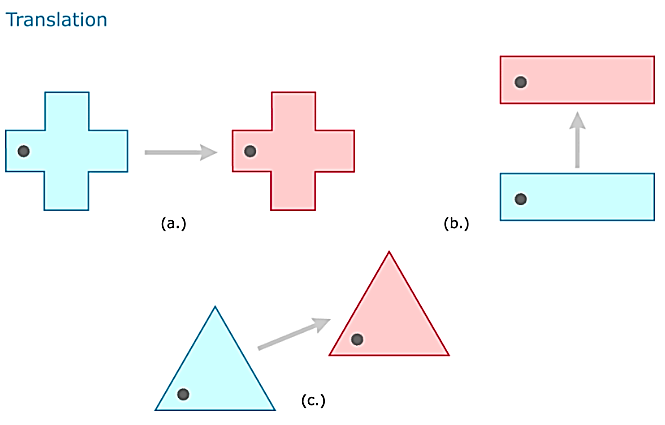
***CLASS COPY – DO NOT WRITE ON***

CW 33: Translations

**Honors Geometry**

****Copy Figures a – c into your notebooks. **Write a definition for translation in your own words.**

* What is true about all of the figures in the example?
* How should we describe translations using proper math vocabulary?

**Plot the image of each figure, given the pre-image and translation, and label it using correct notation.**

1. C(0,-2); Translated vertically 1 unit up and horizontally 1 unit left.
2. D(5,4); Translated horizontally 2 units right and vertically 5 units down.
3. Triangle UTS, with points Translated horizontally 4 units left and vertically 6 units down.
4. Triangle *IHG*, with points Translated horizontally 6 units right and vertically 5 units up.

Plot each pre-image and image and describe the translation that took place.

1. E(-3,0) 🡪 E’(3,4)
2. In the description below, points (0, 3) and (2, 5) are two vertices of a triangle.

If (0,3) translates to (0,0), then (2,5) translates to \_\_\_\_\_\_\_\_

If (0,3) translates to (1,2), then (2,5) translates to \_\_\_\_\_\_\_

If (0,3) translates to (-3,-2), then (2,5) translates to \_\_\_\_\_\_\_

1. The equation for a line is . Graph the line. Graph and determine the equation for the line if the line were translated vertically 3 units up.
2. The equation for a line is Graph and determine what the equation for this line if the line were translated horizontally 10 units to the right.
3. Describe the relationship between the original line and the translated line in problems 10 and 11. Use mathematical evidence to prove your claim.

Connection to congruency . . .

1. Triangle is defined by the points . The triangle is translated horizontally 2 units right and vertically 3 units down. Plot both triangles on a coordinate plane and **prove** that they are congruent by finding the length of each side of the triangle.